



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# BIOLOGICAL BULLETIN

---

## THE MARINE BIOLOGICAL LABORATORY

NINETEENTH REPORT; FOR THE YEAR 1916

TWENTY-NINTH YEAR

|                                       |    |
|---------------------------------------|----|
| I. TRUSTEES (AS OF AUGUST, 1916)..... | 1  |
| II. ACT OF INCORPORATION.....         | 2  |
| III. BY-LAWS OF THE CORPORATION.....  | 3  |
| IV. THE TREASURER'S REPORT.....       | 5  |
| V. THE LIBRARIAN'S REPORT.....        | 7  |
| VI. THE DIRECTOR'S REPORT.....        | 13 |
| Statement.....                        | 13 |
| 1. The Staff.....                     | 15 |
| 2. Investigators and Students.....    | 18 |
| 3. Tabular View of Attendance.....    | 23 |
| 4. Subscribing Institution.....       | 24 |
| 5. Evening Lectures.....              | 25 |
| 6. Members of the Corporation.....    | 26 |

## I. TRUSTEES

AUGUST, 1916

---

### EX OFFICIO

FRANK R. LILLIE, *Director*, The University of Chicago.

GILMAN A. DREW, *Assistant Director*, Marine Biological Laboratory.

D. BLAKELY HOAR, *Treasurer*, 161 Devonshire St., Boston, Mass.

GARY N. CALKINS, *Clerk of the Corporation*, Columbia University.

TO SERVE UNTIL 1920

H. H. DONALDSON..... Wistar Institute of Anatomy and Biology.

M. J. GREENMAN..... Wistar Institute of Anatomy and Biology.

C. W. HARGITT..... Syracuse University.

H. S. JENNINGS..... Johns Hopkins University.

GEORGE LEFEVRE..... University of Missouri, *Secretary of the Board*.

A. P. MATHEWS.....The University of Chicago.  
 G. H. PARKER.....Harvard University.  
 HENRY B. WARD.....University of Illinois.

## TO SERVE UNTIL 1919

H. C. BUMPUS.....Tufts College.  
 R. A. HARPER.....Columbia University.  
 W. A. LOCY.....Northwestern University.  
 JACQUES LOEB.....The Rockefeller Institute for Medical  
 Research.  
 F. P. MALL.....Johns Hopkins University.  
 GEORGE T. MOORE.....Missouri Botanical Garden, St. Louis.  
 L. L. NUNN.....Telluride, Colo.  
 JOHN C. PHILLIPS.....299 Berkeley Street, Boston, Mass.

## TO SERVE UNTIL 1918

CORNELIA M. CLAPP.....Mount Holyoke College.  
 E. G. CONKLIN.....Princeton University.  
 ROSS G. HARRISON.....Yale University.  
 CAMILLUS G. KIDDER.....27 William Street, New York City.  
 M. M. METCALF.....Oberlin, Ohio.  
 WILLIAM PATTEN.....Dartmouth College.  
 JACOB REIGHARD.....University of Michigan.

## TO SERVE UNTIL 1917

S. F. CLARKE.....Williamstown, Mass.  
 CHARLES A. COOLIDGE....Ames Building, Boston, Mass.  
 C. R. CRANE.....Woods Hole, Mass., *President of the Board.*  
 ALFRED G. MAYER.....Carnegie Institution.  
 C. E. MCCLUNG.....University of Pennsylvania.  
 T. H. MORGAN.....Columbia University.  
 ERWIN F. SMITH.....United States Department of Agriculture.  
 E. B. WILSON.....Columbia University.

## II. ACT OF INCORPORATION

---

No. 3170.

## COMMONWEALTH OF MASSACHUSETTS

**Be It Known**, That whereas Alpheus Hyatt, William Sanford Stevens, William T. Sedgwick, Edward G. Gardiner, Susan Minns, Charles Sedgwick Minot, Samuel Wells, William G. Farlow, Anna D. Phillips

and B. H. Van Vleck have associated themselves with the intention of forming a Corporation under the name of the Marine Biological Laboratory, for the purpose of establishing and maintaining a laboratory of station for scientific study and investigation, and a school for instruction in biology and natural history, and have complied with the provisions of the statutes of this Commonwealth in such case made and provided, as appears from the certificate of the President, Treasurer, and Trustees of said Corporation, duly approved by the Commissioner of Corporations, and recorded in this office;

Now, therefore, I, HENRY B. PIERCE, Secretary of the Commonwealth of Massachusetts, *do hereby certify* that said A. Hyatt, W. S. Stevens, W. T. Sedgwick, E. G. Gardiner, S. Minns, C. S. Minot, S. Wells, W. G. Farlow, A. D. Phillips, and B. H. Van Vleck, their associates and successors, are legally organized and established as, and are hereby made, an existing Corporation, under the name of the MARINE BIOLOGICAL LABORATORY, with the powers, rights and privileges, and subject to the limitations, duties, and restrictions, which by law appertain thereto.

*Witness* my official signature hereunto subscribed, and the seal of the Commonwealth of Massachusetts hereunto affixed, this twentieth day of March, in the year of our LORD ONE THOUSAND, EIGHT HUNDRED AND EIGHTY-EIGHT.

(Seal).

HENRY B. PIERCE,  
*Secretary of the Commonwealth.*

### III. BY-LAWS OF THE CORPORATION OF THE MARINE BIOLOGICAL LABORATORY

---

I. The annual meeting of the members shall be held on the second Tuesday in August, at the Laboratory, in Woods Hole, Mass., at 12 o'clock noon, in each year, and at such meeting the members shall choose by ballot a Treasurer and a Clerk, who shall be, *ex officio*, members of the Board of Trustees, and Trustees as hereinafter provided. At the annual meeting to be held in 1897, not more than twenty-four Trustees shall be chosen, who shall be divided into four classes, to serve one, two, three, and four years, respectively, and thereafter not more than eight Trustees shall be chosen annually for the term of four years. These officers shall hold their respective offices until others are chosen and qualified in their stead. The Director and Assistant Director, who shall be chosen by the Trustees, shall also be Trustees, *ex officio*.

II. Special meetings of the members may be called by the Trustees, to be held in Boston or in Woods Hole at such time and place as may be designated.

III. The Clerk shall give notice of meetings of the members by publication in some daily newspaper published in Boston at least fifteen days before such meeting, and in case of a special meeting the notice shall state the purpose for which it is called.

IV. Twenty-five members shall constitute a quorum at any meeting.

V. The Trustees shall have the control and management of the affairs of the Corporation; they shall present a report of its condition at every annual meeting; they shall elect one of their number President and may choose such other officers and agents as they may think best; they may fix the compensation and define the duties of all the officers and agents; and may remove them, or any of them, except those chosen by the members, at any time; they may fill vacancies occurring in any manner in their own number or in any of the offices. They shall from time to time elect members of the Corporation upon such terms and conditions as they may think best.

VI. Meetings of the Trustees shall be called by the President, or by any two Trustees, and the Secretary shall give notice thereof by written or printed notice sent to each Trustee by mail, postpaid. Seven Trustees shall constitute a quorum for the transaction of business. The Board of Trustees shall have power to choose an Executive Committee from their own number, and to delegate to such Committee such of their own powers as they may deem expedient.

VII. The President shall annually appoint two Trustees, who shall constitute a committee on finance, to examine from time to time the books and accounts of the Treasurer, and to audit his accounts at the close of the year. No investments of the funds of the Corporation shall be made by the Treasurer except approved by the finance committee in writing.

VIII. The consent of every Trustee shall be necessary to dissolution of the Marine Biological Laboratory. In case of dissolution, the property shall be given to the Boston Society of Natural History, or some similar public institution on such terms as may then be agreed upon.

IX. These By-Laws may be altered at any meeting of the Trustees, provided that the notice of such meeting shall state that an alteration of the By-Laws will be acted upon.

X. Any member in good standing may vote at any meeting, either in person or by proxy duly executed.

## IV. THE TREASURER'S REPORT

## STATEMENT OF AUDIT

February 28, 1917.

MR. D. BLAKELY HOAR,  
161 Devonshire Street,  
Boston.

*Dear Sir:* We have completed our audit of the accounts of the Marine Biological Laboratory for the year ended December 31, 1916, as kept both at your office in Boston and at Woods Hole and report thereon in the accompanying exhibits and schedules:

Exhibit *A*—Balance-Sheet as of December 31, 1916.

*B*—Income-and-Expense for Year ended December 31, 1916.

Schedule I—Investments (Book Values).

II—Cash Receipts and Payments on Account of Investments.

III—Summary of Inventory of Land, Buildings, and Equipment.

IIIa—Inventory of Land, Buildings, and Equipment, January 1, 1916.

IV—Balancing Account.

We certify that subject to the comments herewith the balance sheet and income-and-expense statement shown herewith in Exhibits *A* and *B* are in accordance with the books and correct to the best of our knowledge and belief.

Very respectfully,  
HARVEY S. CHASE & COMPANY,  
*Certified Public Accountants.*

*Note:* Schedules II–IV are omitted in the following reports.

MARINE BIOLOGICAL LABORATORY BALANCE-SHEET,  
DECEMBER 31, 1916

*Assets*

|                                    |              |             |
|------------------------------------|--------------|-------------|
| Cash in Bank.....                  | \$ 3,322.96  |             |
| Petty Cash at Woods Hole.....      | 200.00       | \$ 3,522.96 |
| Accounts receivable.....           |              | 5,942.01    |
| Investments (Schedule I).....      | \$ 11,086.01 |             |
| Investment cash (Schedule II)..... | 678.54       | 11,764.55   |

Inventories (not available)

Plant account (Schedule III):

|                                    |                     |                     |
|------------------------------------|---------------------|---------------------|
| Land.....                          | \$ 78,406.29        |                     |
| Buildings.....                     | 163,848.88          |                     |
| Equipment.....                     | 73,303.36           |                     |
|                                    | <u>\$315,558.53</u> |                     |
| Less reserve for depreciation..... | 6,942.12            | 308,616.41          |
|                                    |                     | <u>\$329,845.93</u> |

*Liabilities and Surplus*

|                                   |                 |                     |
|-----------------------------------|-----------------|---------------------|
| Accounts payable.....             |                 | \$ 90.58            |
| Suspense items.....               |                 | 3.26                |
| Notes payable.....                | \$ 3,000.00     |                     |
| Turst funds.....                  | <u>8,764.55</u> | 11,764.55           |
| Mortgage on Gansett property..... |                 | 16,409.82           |
| Balancing account.....            |                 | <u>301,577.72</u>   |
|                                   |                 | <u>\$329,845.93</u> |

### MARINE BIOLOGICAL LABORATORY INCOME AND EXPENSE FOR YEAR ENDED DECEMBER 31, 1916

|   | Expense            | Income             | Loss               | Gain               |
|---|--------------------|--------------------|--------------------|--------------------|
| Administration expense.....             | \$ 6,923.92        |                    | \$ 6,923.92        |                    |
| BIOLOGICAL BULLETIN.....                | 2,679.84           | \$ 1,534.08        | 1,145.76*          |                    |
| Boat department expense.....            | 5,023.09           |                    | 5,023.09           |                    |
| Carpenter department.....               | 781.98             | 82.02              | 699.96             |                    |
| Chemical department expense.....        | 1,455.45           |                    | 1,455.45           |                    |
| Dormitories.....                        | 1,667.98           | 1,550.80           | 117.18             |                    |
| Fish trap.....                          | 1,348.68           | 1,406.92           |                    | \$ 58.24           |
| Interest on notes payable.....          | 150.00             |                    | 150.00             |                    |
| Instruction.....                        | 4,075.70           | 5,075.00           |                    | 999.30             |
| Lectures, philosophical.....            | 100.00             |                    | 100.00             |                    |
| Lectures, evening.....                  | 52.80              |                    | 52.80              |                    |
| Library department.....                 | 3,447.37           |                    | 3,447.37           |                    |
| Mess.....                               | 14,737.68          | 14,636.16          | 101.52             |                    |
| Membership dues.....                    |                    | 980.00             |                    | 980.00             |
| Maintenance, buildings and grounds..... | 6,180.18           |                    | 6,180.18           |                    |
| New Laboratory expense.....             | 2,636.11           |                    | 2,636.11           |                    |
| Pumping station expense.....            | 542.01             |                    | 542.01             |                    |
| Research income.....                    |                    | 3,650.00           |                    | 3,650.00           |
| Sundry expense and income.....          | 1,239.12           | 2,765.24           |                    | 1,526.12           |
| Supply department.....                  | 13,838.43          | 21,096.65          |                    | 7,258.22           |
| Special dormitory expense, Dexter       |                    |                    |                    |                    |
| House.....                              | 1,122.31           |                    | 1,122.31           |                    |
| Total expense.....                      | <u>\$68,002.65</u> | <u>\$52,776.87</u> | <u>\$29,697.66</u> | <u>\$14,471.88</u> |
| Total income.....                       |                    | <u>52,776.87</u>   | <u>14,471.88</u>   |                    |
| Excess of expense.....                  | <u>\$15,225.78</u> |                    | <u>\$15,225.78</u> |                    |
| Contribution by Mr. C. R. Crane....     | 20,000.00          |                    |                    |                    |
| Excess carried to balancing account..   | \$ 4,774.22        |                    |                    |                    |

\* Membership dues which are credited to the BIOLOGICAL BULLETIN reduce the actual deficit to \$165.76.

## MARINE BIOLOGICAL LABORATORY INVESTMENTS (BOOK VALUES), DECEMBER 31, 1916

### *Reserve Fund*

|  |            |             |
|--|------------|-------------|
| \$3,000 American Telephone & Telegraph Company, 4's (represented by receipts for same as collateral) . . . . .     | \$2,921.25 |             |
| 3/4 of \$500 Western Telephone & Telegraph Company's 5's . . .   | 372.66     |             |
| 6 shares American Smelting & Refining Company Preferred (represented by receipts for same as collateral) . . . . . | 732.00     |             |
| 8 shares General Electric Company . . . . .  | 972.05     |             |
| 14 shares United Shoe Machinery Company Preferred . . . . .  | 393.75     |             |
| 5 shares Massachusetts Gas Companies, Preferred . . . . .  | 444.63     | \$ 5,836.34 |

### *Lucretia Crocker Fund*

|   |          |          |
|---|----------|----------|
| 1/5 of \$1,000 American Telephone & Telegraph Company, 4's . \$ | 194.75   |          |
| 18 shares Vermont & Massachusetts Railroad Company . . . . .    | 2,416.50 |          |
| 1 share American Telephone & Telegraph Company . . . . .        | 127.06   |          |
| 1 share West End Street Railway Company . . . . .               | 83.00    |          |
| 2½ shares General Electric Company . . . . .                    | 323.85   | 3,145.16 |

### *Library Fund*

|   |        |                    |
|---|--------|--------------------|
| 4/5 of \$1,000 American Telephone & Telegraph Company, 4's . \$ | 779.00 |                    |
| 1/4 of \$500 Western Telephone & Telegraph Company, 5's . . .   | 124.22 |                    |
| 3 shares American Telephone & Telegraph Company . . . . .       | 381.18 |                    |
| 1 share American Smelting & Refining Company, Preferred . .     | 122.00 |                    |
| 2½ shares General Electric Company . . . . .                    | 288.10 |                    |
| 5 shares United Shoe Machinery Company, Preferred . . . . .     | 140.63 |                    |
| 3 shares Massachusetts Gas Companies, Preferred . . . . .       | 269.38 | 2,104.51           |
| Total (Exhibit A) . . . . .                                     |        | <u>\$11,086.01</u> |

## V. THE LIBRARIAN'S REPORT

AUGUST 8, 1916

As compared with last year, all numbers cataloged in the library make a total of 12,615. Of this total the following are new accessions:

|   |       |
|---|-------|
| Journals and serials from societies, laboratories, etc. . . . . | 583   |
| Books . . . . .   | 84    |
| Reprints . . . . .  | 777   |
| Last installment of A. M. N. H. loan . . . . .                  | 1,125 |

With the help of Prof. R. W. Tower, librarian of the American Museum of Natural History, who has been exceptionally generous in his coöperation, practically the entire loan has been placed on



our shelves. Professor Tower has agreed to send to the library as received the current parts of 32 exchanges listed as follows:

*Amer. Phil. Soc. Proc.*,  
*Amsterdam, Verh. K. Akad. Wetenschappen*,  
*Arkiv f. Botanik*,  
*Arkiv f. Zoologi*,  
*Ann. Soc. Zoöl. et Malacol. de Belgique*,  
*Bull. Soc. Roy. de Botan. de Belgique*,  
*Canadian Entomologist*,  
*Bull. Int. Acad. Cracovie*,  
*Dublin, Scientific Proc. Roy. Soc.*,  
*Proc. Roy. Soc. Edinburgh*,  
*Trans. and Proc. Botan. Soc. Edinburgh*,  
*Berichte d. Naturf. Gesell. Freiburg*,  
*Journ. Linnean Soc. London*,  
*Proc. Roy. Soc. London, Ser. B*,  
*Trans. Zoöl. Soc. London*,  
*Mem. and Proc. Manchester Literary and Phil. Soc.*,  
*Trans. and Rep. Manchester Micr. Soc.*,  
*Annales du Mus. d'Hist. Nat. Marseilles*,  
*Medd. K. Vetenskapsakad. Nobelinstitut*,  
*Journ. N. Y. Botan. Gard.*,  
*Bull. Mus. Hist. Nat. Paris*,  
*Atti d. Soc. Toscana Pisa*,  
*Sitzungsber. d. K. B. ges. d. wiss. Math. Natur. Classe, Prag.*,  
*Bull. Acad. Imp. Sci. St. Petersburg*,  
*Memoirs Acad. Imp. Sci. St. Petersburg*,  
*Stettiner Entomol. Zeitung*,  
*K. Svenska Ver. Akad. Aarsbok*,  
*K. Svenska Vet. Akad. Handlingar*,  
*Boll. Mus. Zoöl. Comp. Anat. Torino*,  
*Sitzungsber. Akad. wiss. Math. Naturw. Klasse, Wien*,  
*Verhandlungen K. K. Zool. Bot. Gesell., Wien*.

2,269 volumes and parts of volumes have been accessioned. 867 of these were bound when received. In order to care for the remainder, 656 volumes had to be bound this year, which about doubled our usual binding bill, adding to it \$667.59. (This with

\$171.90 previously expended for a former installment of this loan, makes a total cost for binding of \$839.49.) In addition to the above, the American Museum has also given about 1,000 pamphlets that have not been cataloged.

A considerable addition will be made to the library through the sale of duplicate material representing a value of about \$350. The details of this will be announced later.

A number of gifts have been made to the library which are greatly valued. From publishers, whose works are especially well placed for examination here, we have received the following:

Open Court Publishing Co., 2 books,  
Cambridge University Press, 31 books,  
Saunders, 1 book,  
University of Chicago Press, 2 books.

Books have been received from authors as follows: A. P. Mathews, C. M. Child, J. M. Coulter, C. F. Chamberlain, M. F. Guyer, F. D. Woods, H. H. Donaldson, Henry Kraemer, C. J. Herrick, J. F. Abbott, H. E. Jordan, J. S. Ferguson, and Ramon y Cajal.

Miss Foot presented a long series of papers by Boveri and Whitman and Dr. F. R. Lillie has given 10 miscellaneous volumes.

777 reprints have been given by a long list of authors, among whom are especially to be mentioned 19 English writers: Wm. Bateson, L. Doncaster, E. S. Goodrich, W. Woodland, A. D. Cotton, W. M. Tattersall, W. E. Shipley, R. Gurney, T. V. Hoggson, Sir Charles Elliot, R. C. Punnett, T. Johnson, Richard Elmhirst, J. F. Gemmill, F. Jeffrey Bell, W. B. Benham, A. Willey, W. A. Herdman, and Arnold T. Watson.

Occasion is taken here to thank the other numerous donors whose names may not be given for lack of space.

Among miscellaneous gifts are 16 volumes of the *Biochemische Zeitschrift* from Dr. A. R. Moore, which will be of great value in starting this new set. The Wistar Institute Monographs have been presented by Dr. Greeman, and the Rockefeller Institute has given a set of the Rockefeller Institute Studies. The Surgeon-General's Library has also presented Series 2 of the Index Catalog, which fills a long felt need.

Dr. Drew has deposited with the library his valuable collection of reprints and these have been in constant use this summer.

Under the head of journals and serials from museums, academies, laboratories, etc., the following sets have been completed this year:

*Journal of Medical Research,*  
*Zeit. f. Biochem. u. Biophysik,*  
*Kansas University Science Bulletin.*

223 volumes have been added during the year to incomplete sets.

The 31 serials listed below were not on our shelves last year:

*Univ. Calif. Pub. in Physiology,*  
*Univ. Cal. Pub. in Botany,*  
*Bull. Soc. Roy. de botan. de Belgique,*  
*Mem. Soc. Roy. de Liège,*  
*Bull. Mus. d'hist. nat. Paris,*  
*Abh. Naturwiss. Vereins zu Bremen,*  
*Mem. and Proc. Manchester Literary and Phil. Soc.,*  
*Proc. Roy. Soc. London, Sec. B,*  
*Verhandlungen Zool. Botan. Gesell. Wien,*  
*Sitzungsber. K. Akad. wiss. Wien,*  
*Mem. Soc. Nat. Kiew,*  
*Sitzungsber. Naturforsch. Gesell. Dorpat,*  
*Ann. Mus. Zool. Acad. Imp. Sci. St. Petersburg,*  
*Bull. Acad. Imp. Sci. St. Petersburg,*  
*Mem. Acad. Imp. Sci. St. Petersburg,*  
*Annals Scottish Nat. Hist. Soc.,*  
*Proc. Roy. Soc. Edinburgh,*  
*Sitzungsber. K. B. Gesell. wiss. Prag,*  
*Verh. Natur. wiss. Vereins Heidelberg,*  
*Math. u. Naturwiss. Berichte aus Ungarn,*  
*Berichte d. Naturfor. Gesell. Freiburg,*  
*Verh. K. Akad. Wetensch. Amsterdam,*  
*Proc. Roy. Dublin Soc.,*  
*Atti Soc. Toscana Pisa,*  
*Boll. Mus. Zool. Comp. Anat. Torino,*  
*K. Svenska Vet. Akad. Aarsbok,*  
*K. Svenska Vet. Akad. Handlingar,*  
*Medd. Vet. Akad. Noberinstitut.*

We have also entered subscriptions for new journals as follows:

*Zeit. f. induk. abstamm. u. vererbungslehre,*

*Genetics,*  
*Journ. Med. Res.,*  
*Physiological Abstracts,*  
*Biochem. Zeitschrift.*

One new exchange with the BIOLOGICAL BULLETIN has been arranged: *Bulletin de la Societ  Zool. de France.*

Dr. H. H. Donaldson has generously sent a check to cover the cost of a new Century Dictionary, which has been greatly needed.

Attention is called here to our collection of photographs of foreign laboratories secured by exchange. It is planned to extend this collection to include other laboratories.

It was pointed out last year that four years ago a fund was started to aid us in extending the journal files. Last year the subscriptions to this fund had reached the sum of \$91. This year a much larger group of investigators (60) whose names follow, continuing Dr. Tashiro's lead, contributed in amounts from 50 cents to \$2.00. A total of \$53.00 has been received in this way to date.

|                    |                      |
|--------------------|----------------------|
| W. C. Allee,       | R. S. Lillie,        |
| Ezra Allen,        | Jacques Loeb,        |
| F. H. Adler,       | E. J. Lund,          |
| G. A. Baitsell,    | Clara J. Lynch,      |
| R. H. Bowen,       | E. P. Lyon,          |
| C. B. Bridges,     | E. E. MacMorland,    |
| R. A. Budington,   | C. E. McClung,       |
| G. L. Carver,      | T. H. Morgan,        |
| Eleanor Carothers, | Stewart Mudd,        |
| C. M. Clapp,       | W. J. V. Osterhout,  |
| C. M. Child,       | Charles Packard,     |
| C. L. Chapin,      | B. M. Patten,        |
| E. J. Cohn,        | C. L. Parmenter,     |
| M. Copeland,       | Florence Peebles,    |
| E. V. Cowdry,      | A. Richards,         |
| I. J. Davies,      | Miss A. E. Richards, |
| G. A. Drew,        | C. G. Rogers,        |
| D. J. Edwards,     | F. M. Root,          |
| W. E. Garrey,      | A. F. Shull,         |

|                  |                      |
|------------------|----------------------|
| Wilson P. Gee,   | R. A. Spaeth,        |
| A. J. Goldfarb,  | A. H. Sturtevant,    |
| H. B. Goodrich,  | H. D. Taylor,        |
| A. O. Gross,     | Clara L. Ware,       |
| M. F. Guyer,     | M. W. Welch,         |
| L. V. Heilbrunn, | D. H. Wenrich,       |
| Mary J. Hogue,   | Paul S. Welch,       |
| E. R. Hoskins,   | H. L. Wieman,        |
| J. S. Huxley,    | W. H. Weston,        |
| F. R. Lillie,    | Miss A. E. Woodward. |

Dr. Bumpus contributed \$25 and Doctors Meigs, A. G. Mayer, and Knowler added \$10 each toward completing the sums previously promised by them. In this way the total amount of \$108 was received this year. In addition there are still a few subscriptions expected from promises already published.

This fund represents a most important coöperative spirit in the development of the library. The library is used more now than ever before, as witnessed by the fact that 350 books were charged in one day. Never before have so many individuals of the Laboratory shown their appreciation of the library by voluntarily contributing to its support and extension. Such wide interest on the part of so many members of the Laboratory leading to numerous small gifts, whether in money or books, will be of the greatest value to the library. It is much appreciated! All the more because it is so broadly coöperative!

It is to be hoped that the Laboratory can soon supplement these gifts and place at the disposal of the library a sum to be expended in emergencies for the purchase of bargains which often become unexpectedly available. Such a fund of say \$300 a year would make it possible to fill in gaps, complete sets, and add works which would be difficult to secure through more regular and slower channels. There is no more urgent need of the library than the maintenance of such an emergency fund, now so well started.

## VI. THE DIRECTOR'S REPORT

---

### TO THE TRUSTEES OF THE MARINE BIOLOGICAL LABORATORY:

*Gentlemen:* I have the honor to present a report of the twenty-ninth session of the Marine Biological Laboratory for the year 1916. The total attendance was slightly smaller than in 1915, 231 as compared with 242, but larger than that of any earlier year. There were 129 investigators and 102 students, a falling off of 8 in the number of investigators and of 3 in the number of students. The decrease in investigators falls entirely under the head of investigation under instruction; indeed the number of independent investigators shows a gain of 5. The decrease should therefore be regarded as probably of a fluctuating character, as the group concerned consists largely of research students of members of the independent group of investigators. The slight decrease in student attendance was due entirely to our method of registration, for the number of applicants for courses was larger than ever before; after the courses were registered to the limit of our accommodations many students were refused registration. Later some of those registered failed to appear. It is obvious, therefore, that heads of departments should be allowed to register in excess of accommodations to a certain extent, in the expectation that a certain proportion of those registered will finally be unable to attend. The past season is the first one in which registration in advance was positively required, and this was done because the experience of 1915 had shown that unlimited registration was likely to exceed capacity, as indeed the number of applications in 1916 actually showed.

In spite of the slight decrease in numbers there was an increase in the receipts from investigators and students over all previous sessions, viz.: \$8,725 in 1916 as compared with \$8,325 in 1915, \$7,300 in 1914, \$6,160 in 1913, and \$5,175 in 1912. The gain was entirely from the research side due to the fact that coöperating institutions subscribed \$800 more in 1916 than in 1915 (\$5,000 as against \$4,200). The number of subscribing institutions was 40 in 1916 and 37 in 1915. The Supply Department has again shown a large increase of sales, which amounted to \$21,096.65,

as against \$16,932.00 in 1915, \$14,003.35 in 1914, \$14,554.40 in 1913, \$13,966.35 in 1912, \$10,303.61 in 1911. The business has actually doubled in the last six years.

For several years the Director has called attention to need of increased accommodation for workers at the Laboratory in two directions: first the need of extra dormitory space for students, and second the need of cottages for the families of investigators, or of land on which such cottages could be placed. Both these needs now bid fair to be satisfied for some years to come. Mr. Crane has turned over to the Laboratory the Dexter House for use as a dormitory, with a sufficient sum of money to repair and equip it. We feel that with the other dormitory accommodations previously provided the students' needs will be adequately cared for. At the same time this extra accommodation enables us to dedicate the third floor of the Supply Department building, hitherto reserved for dormitory purposes, to the rapidly growing needs of this Department.

Provision has also been made for building sites for investigators by the purchase of 21 acres of woodland in the Gansett woods, immediately joining the Crow Hill region of Woods Hole, in which many of the Laboratory members now have homes, and extending from Quissett Ave. nearly to Buzzards Bay. This piece of land enjoys perpetual rights in a bathing reservation in a sandy cove of Buzzards Bay immediately adjoining. For convenience of location with reference to the Laboratory and to the sea no more desirable location could have been found; and there is no more beautiful tract in the entire town of Falmouth. Mr. Crane has furnished the money necessary to complete the purchase on favorable terms made by the owners, and he has also provided funds for its development, including the building of roads, which it is hoped may be accepted by the town. This work is now in progress, so that it is expected that parts of the land will be available for building purposes in the spring. A considerable number of requests for lots already have been received and some preliminary assignments made.

In view of the difficulty that has existed for so long in securing building sites for our membership and the probability that such difficulties are likely to increase in the future, the director

recommends that none of this land be permanently alienated from the Laboratory by outright sale; and in order that it may be reserved for the purposes for which it was acquired he also recommends that none of it be otherwise disposed of except to members of the Laboratory unless by vote of the Board of Trustees in each case. Deeds of sale should, therefore, include a claim ensuring ultimate reversion to the Laboratory on equitable terms, and provisions should also be made for long term leaseholds. The form and value of the leasehold have occasioned much thought, and certain proposals are herewith presented for consideration by the Board. The valuations have been determined with no idea of speculative gain, but solely from the point of view of covering cost and expense of development with a small margin of safety for probable slowness of development. There is room obviously for difference of opinion with reference to values set on individual lots which have been determined as nearly as possible on the basis of general desirability. It will be found on comparison that the values thus determined contrast very favorably with the prices of building lots anywhere else in Woods Hole.

There is appended as part of this report a list of the staff, of investigators and students in attendance, a tabular view of attendance covering the last five years, a list of subscribing institutions, the Evening Lectures, and the Membership of the Corporation.

## I. THE STAFF

---

1916

FRANK R. LILLIE, DIRECTOR,

Professor of Embryology, and Chairman of the Department of Zoölogy,  
The University of Chicago.

GILMAN A. DREW, ASSISTANT DIRECTOR, Marine Biological  
Laboratory.

### ZOÖLOGY

#### I. INVESTIGATION

GARY N. CALKINS. . . . . Professor of Protozoölogy, Columbia University.



- E. G. CONKLIN.....Professor of Zoölogy, Princeton University.
- GILMAN A. DREW.....Assistant Director, Marine Biological Laboratory.
- GEORGE LEFEVRE.....Professor of Zoölogy, The University of Missouri.
- FRANK R. LILLIE.....Professor of Embryology, The University of Chicago.
- C. E. MCCLUNG.....Professor of Zoölogy, University of Pennsylvania.
- T. H. MORGAN.....Professor of Experimental Zoölogy, Columbia University.
- E. B. WILSON.....Professor of Zoölogy, Columbia University.

## II. INSTRUCTION

- CASWELL GRAVE.....Associate Professor of Zoölogy, Johns Hopkins University.
- W. C. ALLEE.....Professor of Biology, Lake Forest College.
- GEORGE A. BAITSELL.....Instructor in Biology, Yale University.
- ROBERT HALL BOWEN....Graduate Student, Columbia University.
- W. J. KOSTIR.....Instructor in Zoölogy and Entomology, Ohio State University.
- T. W. PAINTER.....Adjunct Professor of Zoölogy, University of Texas.
- FRANCIS M. ROOT.....Bruce Fellow, Johns Hopkins University.

## EMBRYOLOGY

### I. INVESTIGATION (See Zoölogy)

### II. INSTRUCTION

- WILLIAM E. KELLICOTT...Professor of Biology, Goucher College.
- ROBERT A. BUDINGTON....Professor of Zoölogy, Oberlin College.
- CHARLES PACKARD.....Instructor in Zoölogy, Columbia University.
- CHARLES G. ROGERS.....Professor of Zoölogy, Oberlin College.
- REYNOLD A. SPAETH.....Instructor in Biology, Yale University.

## PHYSIOLOGY

### I. INVESTIGATION

- ALBERT P. MATHEWS.....Professor of Physiological Chemistry, The University of Chicago.
- RALPH S. LILLIE.....Professor of Biology, Clark University.

- HAROLD C. BRADLEY . . . . . Assistant Professor of Physiological Chemistry, University of Wisconsin.
- SHIRO TASHIRO . . . . . Instructor in Physiological Chemistry, The University of Chicago.

## II. INSTRUCTION

- RALPH S. LILLIE . . . . . Professor of Biology, Clark University.
- WALTER E. GARREY . . . . . Professor of Physiology, Tulane University.
- FRANK P. KNOWLTON . . . . . Professor of Physiology, Syracuse University.
- A. R. MOORE . . . . . Professor of Physiology, Rutgers College.

PHILOSOPHICAL ASPECTS OF BIOLOGY AND ALLIED SCIENCES  
LECTURES

- EDWARD G. SPAULDING . . . . . Professor of Philosophy, Princeton University.

## BOTANY

- GEORGE T. MOORE . . . . . Director, Missouri Botanical Garden and Professor of Botany, Washington University.
- IVEY F. LEWIS . . . . . Professor of Biology, University of Virginia.
- CARL S. HOAR . . . . . Instructor in charge of Botany, Williams College.

## LIBRARY

- H. E. MCKNOWER . . . . . Professor of Anatomy, University of Cincinnati, Librarian.
- MARY E. SCOTT . . . . . Assistant Librarian.

Chemical Supplies<sup>1</sup>

- OLIVER S. STRONG . . . . . Instructor in Anatomy, College of Physicians and Surgeons, New York City, Chemist.

## Supply Department

- |                                     |  |
|-------------------------------------|--|
| G. M. GRAY . . . . . Curator.       | A. M. HILTON . . . . . Collector.      |
| JOHN J. VEEDER . . . . . Captain.   | F. G. GUSTAFSON . . . . . Collector in |
| E. M. LEWIS . . . . . Engineer.     | Botany.                                |
| A. W. LEATHERS . . . . . Collector. | EDNA E. WELLS . . . . . Clerk.         |

<sup>1</sup> Compound microscopes, with two oculars and two objectives, rack and pinion and fine adjustment, may be rented for the seasons at \$7.00 each, provided notice is received by the assistant director not later than June 15.

F. M. MACNAUGHT. . . . Business Manager.

HERBERT A. HILTON. . . . Superintendent of Buildings and Grounds.

## 2. INVESTIGATORS AND STUDENTS

1916

### ZOÖLOGY

#### Independent Investigators

ADDISON, WILLIAM H. F., Assistant Professor of Normal Histology and Embryology,  
University of Pennsylvania.

ALLEE, WARDER C., Professor of Biology, Lake Forest College.

ALLEN, EZRA, Honorary Fellow, University of Pennsylvania.

BAITSELL, GEORGE A., Instructor in Biology, Yale University.

BINFORD, RAYMOND, Professor of Zoölogy, Earlham College.

BRIDGES, CALVIN B., Columbia University.

BUDINGTON, ROBERT A., Professor of Zoölogy, Oberlin College.

CALKINS, GARY N., Professor of Protozoölogy, Columbia University.

CAROTHERS, E. ELEANOR, University of Pennsylvania.

CARVER, GAIL L., Professor of Biology, Mercer University.

CHIDESTER, FLOYD E., Associate Professor of Zoölogy, Rutgers College.

CHILD, CHARLES M., Associate Professor of Zoölogy, University of Chicago.

CLAPP, CORNELIA M., Professor Emeritus, Mount Holyoke College.

CONKLIN, E. G., Professor of Biology, Princeton University.

COPELAND, MANTON, Professor of Biology, Bowdoin College.

COWDRY, EDMUND V., Associate in Anatomy, Johns Hopkins Medical School.

COWDRY, N. H., Johns Hopkins Medical School.

CRAMPTON, H. E., Professor of Zoölogy, Barnard College, Columbia University.

DONALDSON, HENRY H., Professor of Neurology, Wistar Institute.

DREW, GILMAN A., Assistant Director, Marine Biological Laboratory, Woods Hole.

GEE, WILSON, Professor of Biology, Emory University.

GOLDFARB, A. J., Assistant Professor of Biology, College of the City of New York.

GOLDSCHMIDT, RICHARD, Kaiser Wilhelm Institut für Biologie.

GOODRICH, HUBERT B., Instructor in Biology, Union College.

GRAVE, CASWELL, Associate Professor of Zoölogy, Johns Hopkins University.

GREGORY, EMILY R., University of Pennsylvania.

GROSS, ALFRED O., Assistant Professor of Zoölogy, Bowdoin College.

GUYER, MICHAEL F., Professor of Zoölogy, University of Wisconsin.

HEILBRUNN, LEWIS V., Associate in Embryology, University of Chicago.

HOGUE, MARY J., Instructor in Zoölogy, Wellesley College.

HOSKINS, ELMER R., Instructor in Anatomy, New York University.

JACOBS, MERKEL H., Assistant Professor of Zoölogy, University of Pennsylvania.

KELLCOTT, WILLIAM E., Professor of Biology, Goucher College.

KERNALL, MORRIS J., University of Illinois.

KNEWER, HENRY MCE., Professor of Anatomy, University of Cincinnati.

LEFEVRE, GEORGE, Professor of Zoölogy, University of Missouri.

LILLIE, FRANK R., Professor of Embryology, University of Chicago.

LUND, ELMER J., Assistant Professor of Zoölogy, University of Minnesota.

- McCLUNG, CLARENCE E., Director of Zoölogy Laboratories, University of Pennsylvania.
- MALONE, EDWARD F., Associate Professor of Anatomy, University of Cincinnati.
- MOODIE, ROY L., Associate in Anatomy, University of Illinois.
- MOORE, CARL R., Assistant in Embryology, University of Chicago.
- MORGAN, THOMAS H., Professor of Experimental Zoölogy, Columbia University.
- MORRIS, MARGARET, Yale University.
- MULLER, HERMANN J., Instructor, Rice Institute.
- NEWMAN, HORATIO H., Associate Professor of Zoölogy, University of Chicago.
- PACKARD, CHARLES, Instructor in Zoölogy, Columbia University.
- PAPPENHEIMER, ALVIN M., Assistant Professor of Pathology, Columbia University.
- PATTEN, WILLIAM, Professor of Biology, Dartmouth College.
- PEEBLES, FLORENCE, Professor of Biology, H. Sophie Newcomb Memorial College.
- REAGEN, F. P., Princeton University.
- RICHARDS, A., Adjunct Professor of Zoölogy, University of Texas.
- ROGERS, CHARLES G., Professor of Comparative Physiology, Oberlin College.
- SHULL, A. FRANKLIN, Associate Professor of Zoölogy, University of Michigan.
- SHUMWAY, WALDO, Instructor in Biology, Amherst College.
- SPAETH, REYNOLD A., Instructor in Biology, Yale University.
- SPAULDING, EDWARD G., Professor of Philosophy, Princeton University.
- STOCKARD, CHARLES R., Professor of Anatomy, Cornell Medical College.
- STRONG, OLIVER S., Instructor in Anatomy, Columbia University.
- STRONG, ARCHIBALD M., Instructor in Medicine, Columbia University.
- STURTEVANT, ALFRED H., Columbia University.
- TAYLOR, HERBERT D., Assistant in Pathology and Bacteriology, Rockefeller Institute.
- TENNENT, DAVID H., Professor of Biology, Bryn Mawr College.
- WENRICH, DAVID H., Instructor in Zoölogy, University of Pennsylvania.
- WEINSTEIN, ALEXANDER, Fellow, Columbia University.
- WELCH, PAUL S., Associate Professor of Entomology, Kansas State Agricultural College.
- WHITING, PHINEAS W., Research Fellow, University of Pennsylvania.
- WIEMAN, HARRY L., Head of Dept. of Zoölogy, University of Cincinnati.
- WILSON, E. B., Professor of Zoölogy, Columbia University.
- WOODWARD, ALVALYN E., Instructor, Vassar College.

#### Beginning Investigators

- BLAKE, IRVING H., Dept. of Zoölogy and Physiology, Oregon Agricultural College.
- BRUMFIEL, DANIEL M., Instructor in Animal Biology, University of Iowa.
- CHAPIN, CATHARINE L., University of Chicago.
- COHN, EDWIN J., University of Chicago.
- DAVIES, I. J., Micrologist, Rice Institute.
- GLOBUS, JOSEPH H., Assistant in Anatomy, Cornell Medical School.
- GOLDMAN, AGNES, Cornell Medical School.
- HEILBRUNN, STELLA, Teacher, Bay Ridge High School, Brooklyn.
- HERMAN, WILLIAM, Harvard Medical School.
- HOY, WILLIAM E., JR., Instructor, University of Rochester.
- HUXLEY, JULIAN S., Assistant Professor of Biology, Rice Institute.
- LYNCH, CLARA J., 925 W. Cleveland Ave., Canton, Ohio.

MACARTHUR, JOHN W., Associate in Zoölogy, University of Chicago.  
MACMORLAND, EDWARD E., Fellow in Biology, Princeton University.  
COOPER, ARTHUR R., Fellow in Zoölogy, University of Illinois.  
MINOURA, TADACHIKA, University of Chicago.  
MONTGOMERY, MRS. PRISCILLA B., University of Pennsylvania.  
PARMENTER, CHARLES L., Assistant, University of Minnesota.  
PINNEY, MARY E., Demonstrator in Biology, Bryn Mawr College.  
ROOT, FRANCIS M., Fellow, Johns Hopkins University.  
SAFIR, SHELLEY R., Teacher in Stuyvesant High School, New York City.  
SMITH, CHRISTIANNA, Assistant, Zoölogy Department, Mt. Holyoke College.  
SPEIDEL, CARL C., Graduate Student, Princeton University.  
WARE, CLARA C., Assistant at Barnard College, Columbia University.  
WHITE, EDITH G., Research Assistant, Princeton University.

## PHYSIOLOGY

### Independent Investigators

CHAMBERS, ROBERT, JR., Instructor in Anatomy, Cornell Medical College.  
DAY, EDWARD C., Lecturer in Physiology, Bryn Mawr College.  
DUESBERG, JULES, Research Associate, Carnegie Institution.  
EDWARDS, DAYTON J., Instructor in Physiology, College of City of New York.  
ELLIS, FREDERICK W., Monson, Mass.  
GARREY, WALTER E., Professor of Physiology, Tulane University.  
HARVEY, E. NEWTON, Assistant Professor of Physiology, Princeton Univ.  
HARVEY, MRS. E. NEWTON, Princeton, N. J.  
KNOWLTON, FRANK P., Professor of Physiology, Syracuse University.  
KUDO, R., Rockefeller Institute for Medical Research.  
LILLIE, RALPH S., Professor of Biology, Clark University.  
LOEB, JACQUES, Head of Department of Experimental Biology, Rockefeller Institute for Medical Research.  
LYON, ELIAS P., Professor of Physiology, University of Minnesota.  
MATHEWS, ALBERT P., Professor of Physiological Chemistry, University of Chicago.  
MOORE, ARTHUR R., Professor of Physiology, Rutgers College.  
NOGUCHI, HIDEYO, Research Member, Rockefeller Institute for Medical Research.  
NORTHROP, JOHN H., Assistant, Rockefeller Institute for Medical Research.  
PATTEN, BRADLEY M., Senior Instructor, Western Reserve Medical School.  
PRICE, WESTON A., Chairman, Research Commission of the National Dental Association, Cleveland, Ohio.  
RICHARDS, ANNABELLA E., Demonstrator of Chemistry, Woman's Medical College of Pennsylvania.  
RUDISCH, JULIUS, Consulting Physician, Mount Sinai Hospital, New York.  
VAN DER STRICHT, O., Western Reserve Medical School.  
WASTENEYS, HARDOLPH, Associate in Experimental Biology, Rockefeller Institute for Medical Research.

### Beginning Investigators

ADLER, FRANCIS H., University of Pennsylvania.  
CHAMBERLAIN, MARY M., Fellow, University of Pennsylvania.  
NOBLE, ARLYLE, Assistant in Bacteriological Research, Parke Davis & Co.

**BOTANY****Independent Investigators**

- LEWIS, IVEY F., Professor of Biology, University of Virginia.  
LYMAN, GEORGE R., Pathological Inspector, Dept. of Agriculture, Washington, D. C.  
MOORE, GEORGE T., Director, Missouri Botanical Garden, St. Louis, Mo.  
MOORE, EMMELINE, Instructor, Vassar College.  
OSTERHOUT, W. J. V., Professor of Botany, Harvard University.  
SNOW, LAETITIA M., Associate Professor of Botany, Wellesley College.  
WESTON, WILLIAM H., JR., Instructor in Biology, Adelbert College.

**Beginning Investigator**

- HAAS, ALBERT R., Graduate Student, Harvard University.

**STUDENTS**

1916

---

**BOTANY**

- BROWNING, HAROLD W., University of Wisconsin, Madison, Wis.  
CLUM, HAROLD H., Student, Oberlin College, Oberlin, Ohio.  
DONOVAN, STEPHEN M., Student, St. Bonaventure, St. Bonaventure, N. Y.  
DE ANGULO, MRS. CARY F., Carmel, California.  
FURBER, JANE M., 769 Washington St., Brookline, Mass.  
JONES, WINIFRED, Teacher, Cincinnati Public Schools, Cincinnati, Ohio.  
MCNAIR, FRANCES D., Smith College, Northampton, Mass.  
MCWHORTER, FRANK P., Vanderbilt University, Nashville, Tenn.  
MARTIN, GEORGE W., Instructor, Mass. Agricultural College, Amherst, Mass.  
PAGE, FREDERICK S., Instructor, Dartmouth College, Hanover, N. H.  
REEVES, WALTER S., Missouri Botanical Garden, St. Louis, Mo.  
SMITH, EDNA L., Carmel, California.

**EMBRYOLOGY**

- BAKER, ETHEL C., 123 Chiswick Road, Boston, Mass.  
BEYER, HENRY G., U. S. Navy, Retired.  
BODINE, JOSEPH H., Assistant in Zoölogy, University of Pennsylvania.  
BOWEN, ROBERT H., 330 Summit Ave., Mt. Vernon, N. Y.  
CHARLTON, HARRY H., North Billerica, Mass.  
DRUIEN, MILDRED M., Vassar College, Poughkeepsie, N. Y.  
HAGUE, FLORENCE, Assistant, Kansas State Agricultural College.  
HOAGLAND, RUTH A., Assistant in Zoölogy, Vassar College.  
HOPKINS, HOYT S., Johns Hopkins University, Baltimore, Md.  
JOB, THESLE T., Fellow, State University of Iowa.  
LOPEZ-SUAREZ, JUAN, Madrid.  
MCROBERTS, EARL S., Butler College, Indianapolis, Ind.  
MAHR, ERNEST F., Syracuse University, Syracuse, N. Y.  
MASON, MICHAEL L., Northwestern University.  
MOORE, DOROTHEA M., Radcliffe College, Cambridge, Mass.

MYERS, DOROTHY K., Barnard College, New York City.  
PARKER, SYLVIA L., Laboratory Assistant, Mt. Holyoke College.  
RAE, ANNE M., Teacher, Girls High School, Brooklyn, N. Y.  
RIPPLE, C. VINCENT, Instructor, South Philadelphia High School.  
ROWLAND, EDITH L., Barnard College, New York City.  
SCHNEIDER, PETER A., Instructor, University of Vermont.  
SHAW, MYRON E., Student, Carleton College.  
SMITH, ELIZABETH A., Instructor in Zoölogy, University of Wisconsin.  
SPROWLES, EDITH A., Teacher, Frankford High School, Frankford, Pa.  
VAUPEL, JEAN, University of Cincinnati.  
WARDWELL, EDWARD H., Graduate Student, Brown University.

### PHYSIOLOGY

CHASE, SAMUEL W., Student, Harvard University.  
CHILDS, HENRY E., Teacher, Rochester, N. Y.  
GREISHEIMER, ESTHER, Clark University.  
HUNT, HARRISON R., Student, Harvard University.  
IRWIN, MARION, 53 Garden St., Cambridge, Mass.  
MILLIKIN, FRANCES, Smith College, Northampton, Mass.  
MUDD, STUART, Princeton, N. J.  
MÜHL, ANITA M., Butler College, Indianapolis, Ind.  
POND, SAMUEL E., Fellow, Clark University.  
RUNYON, PAUL M., Student, Princeton University.  
SAMPSON, MYRA M., Instructor, Smith College.  
TWINING, RALPH H., Clark University.  
YOUNG, PAUL T., Graduate Student, Princeton University.  
YOUNG, ELDRID G., 4876 Sherbrooke St., Montreal.

### ZOÖLOGY

BACH, ELLEN B., 721 S. Ingalls St., Ann Arbor, Mich.  
BARGEN, JACOB A., Student, Carleton College.  
BICKERSTAFF, FLORENCE W., Student, Oberlin College.  
BIDDLE, M. GEORGINA, 2017 De Lancey Place, Philadelphia, Pa.  
BLATCHFORD, BARBARA, Student, Vassar College.  
BRENTON, THADDEUS R., Laboratory Assistant in Zoölogy, Moores Hill College.  
BRUMBACK, FLORENCE M., Teacher, Waukegan Township High School.  
BRUNSWICK, MARK, Quissett, Mass.  
BRYANT, GLADYS, Student, Radcliffe College.  
CHOATE, MABEL, Barnard College, Columbia University.  
CAULDWELL, OLIVIA, Student, Vassar College.  
COLVILL, HELEN, Teacher, Circleville, Ohio.  
DAVIS, GORDON E., Oberlin College.  
DAWSON, JAMES A., Assistant in Biology, Yale University.  
DETWILER, SAMUEL R., Graduate Student, Yale University.  
DE LA CRUZ, DIONYSIA G., Student, Sophie Newcomb College.  
ELLINGER, MARGARET, 14 W. 25th St., Baltimore, Md.  
FELTY, AUGUSTUS R., 734 Prospect Ave., Hartford, Conn.  
HERRICK, RUTH, University of Chicago.  
HINRICHS, MARIE A., 1832 Blue Island Ave., Chicago, Ill.

HOULDING, ERNEST W., 182 E. College St., Oberlin, Ohio.  
 LAMB, LAURA, 527 S. 41st St., Philadelphia, Pa.  
 LEVIEN, EUNICE M., Lake Forest College.  
 LEIGH, HOWARD, Earlham College,  
 MACK, RUTH J., Radcliffe College, Cambridge, Mass.  
 NEUN, ELSIE G., University of Rochester.  
 NUTE, BERTHA E., Mount Holyoke College.  
 ROACH, ETHEL S., University of Rochester.  
 RORER, MARY D., Student, Mount Holyoke College.  
 ROWE, GEORGIA M., 2321 N. Calvert St., Baltimore, Md.  
 RUHL, REBECCA L., 205 E. Main St., Clarksburg, W. Va.  
 SEAGO, MARY M., Student, Sophie Newcomb College.  
 SKILLERN, INEZ, Sweet Briar College, Sweet Briar, Va.  
 STEWART, ELEANOR G., 425 St. Clair St., Pittsburgh, Pa.  
 STEWART, FRED W., Schuyler Fellow, Cornell University.  
 SWANN, MRS. ARTHUR W., 124 East 61st St., New York City.  
 TAYLOR, MARTHA, Student, Radcliffe College.  
 TILGHMAN, SARAH A., Goucher College.  
 TURK, IRENE, Hunter College, New York City.  
 VERNOOY, LESTER C., Amherst College.  
 WAKEFIELD, LUCILE, Student, Carnegie Institute of Technology.  
 WALKER, LOUISE, Laboratory Assistant, Brearley School, New York City.  
 WALTERS, MARY J., Goucher College, Baltimore, Md.  
 WALTON, EVERETT P., Topsham, Maine.  
 WASSERMAN, JEANETTE H., Hunter College, New York City.  
 WHITE, GERTRUDE M., Assistant, University of Wisconsin.  
 WEINSTEIN, FLORENCE, Student, Barnard College.  
 WELCH, M. W., 1806 Morse Ave., Chicago, Ill.  
 WENRICH, MYRA S., Philadelphia, Pa.  
 YAGLE, ELIZABETH M., Student, Carnegie Institute of Technology.

### 3. TABULAR VIEW OF ATTENDANCE

|                          | 1912 | 1913 | 1914 | 1915 | 1916 |
|--------------------------|------|------|------|------|------|
| INVESTIGATORS—Total..... | 93   | 122  | 129  | 137  | 129  |
| Independent:             |      |      |      |      |      |
| Zoölogy.....             | 44   | 58   | 62   | 69   | 70   |
| Physiology.....          | 14   | 17   | 22   | 20   | 23   |
| Botany.....              | 10   | 11   | 10   | 6    | 7    |
| Under Instruction:       |      |      |      |      |      |
| Zoölogy.....             | 21   | 21   | 31   | 36   | 25   |
| Physiology.....          | 2    | 7    | 1    | 4    | 3    |
| Botany.....              | 2    | 7    | 3    | 2    | 1    |
| STUDENTS—Total.....      | 67   | 69   | 89   | 105  | 102  |
| Zoölogy.....             | 24   | 33   | 43   | 47   | 50   |



|                                    |     |     |     |     |     |
|------------------------------------|-----|-----|-----|-----|-----|
| Embryology.....                    | 15  | 22  | 21  | 37  | 26  |
| Physiology.....                    | 11  | 8   | 10  | 15  | 14  |
| Botany.....                        | 17  | 7   | 15  | 6   | 12  |
| TOTAL ATTENDANCE.....              | 160 | 191 | 218 | 242 | 231 |
| INSTITUTIONS REPRESENTED—Total ..  | 57  | 80  | 77  | 79  | 73  |
| By investigators.....              | 43  | 50  | 51  | 59  | 51  |
| By students.....                   | 36  | 41  | 47  | 42  | 45  |
| SCHOOLS AND ACADEMIES REPRESENTED: |     |     |     |     |     |
| By investigators.....              | 2   | 3   | 1   | 3   | —   |
| By students.....                   | 1   | 6   | 5   | 9   | 3   |

#### 4. SUBSCRIBING INSTITUTIONS—1916

---

AMHERST COLLEGE  
 BARNARD COLLEGE  
 BOWDOIN COLLEGE  
 BRYN MAWR COLLEGE  
 CARLETON COLLEGE  
 CARNEGIE INSTITUTE OF TECHNOLOGY  
 CLARK UNIVERSITY  
 COLUMBIA UNIVERSITY  
 DARTMOUTH COLLEGE  
 ELSE SERINGHAUS SCHOLARSHIP, HUNTER COLLEGE, NEW YORK CITY  
 GOUCHER COLLEGE  
 HARVARD UNIVERSITY  
 JOHNS HOPKINS UNIVERSITY  
 KANSAS STATE AGRICULTURAL COLLEGE  
 KAISER WILHELM INSTITUT FÜR BIOLOGIE  
 LAKE FOREST COLLEGE  
 MOUNT HOLYOKE COLLEGE  
 NORTHWESTERN UNIVERSITY  
 OBERLIN COLLEGE  
 PRINCETON UNIVERSITY, DEPT. OF BIOLOGY  
 PRINCETON UNIVERSITY, DEPT. OF PSYCHOLOGY  
 RADCLIFFE COLLEGE  
 ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH  
 RICE INSTITUTE  
 RUTGERS COLLEGE  
 SMITH COLLEGE

H. SOPHIE NEWCOMB MEMORIAL COLLEGE  
 UNIVERSITY OF CHICAGO  
 UNIVERSITY OF CINCINNATI  
 UNIVERSITY OF ILLINOIS  
 UNIVERSITY OF KANSAS  
 UNIVERSITY OF MICHIGAN  
 UNIVERSITY OF PENNSYLVANIA  
 UNIVERSITY OF ROCHESTER  
 UNIVERSITY OF TEXAS  
 UNIVERSITY OF WISCONSIN  
 VASSAR COLLEGE  
 WELLESLEY COLLEGE  
 WISTAR INSTITUTE  
 YALE UNIVERSITY

## 5. EVENING LECTURES, 1916

---

- Friday, June 30,  
 PROF. W. J. V. OSTERHOUT....."Permeability and Antagonism."  
 Friday, July 7,  
 PROF. JACQUES LOEB....."On Adaptation to Environment."  
 Tuesday, July 11,  
 DR. ROBERT M. YERKES....."The Study of Monkeys and Apes."  
 Friday, July 14,  
 DR. JAMES B. MURPHY....."Studies in Lymphoid Activity."  
 Tuesday, July 18,  
 PROF. ALEXANDER PETRUNKEVITCH. "Segmentation in Arthropods."  
 Friday, July 21,  
 PROF. J. LAWRENCE HENDERSON... "Organization as a Physical Chemical Problem."  
 Tuesday, July 25,  
 PROF. W. B. CANNON....."Some Recent Studies of Glands of Internal Secretion."  
 Friday, July 28,  
 PROF. RICHARD GOLDSCHMIDT....."Experimental Intersexuality and the Sex-problem."  
 Tuesday, Aug. 1,  
 DR. RAYMOND PEARL....."Parental Alcoholism and the Progeny in Poultry."

Tuesday, Aug. 8,

DR. ALFRED G. MAYER . . . . . "Biological Problems of the  
Pacific."

## MEMBERS OF THE CORPORATION

---

### LIFE MEMBERS

- ALLIS, MR. E. P., JR., Palais Carnoles, Menton, France.  
 ANDREWS, MRS. GWENDOLEN FOULKE, Baltimore, Md.  
 BILLINGS, MR. R. C., 66 Franklin St., Boston, Mass.  
 CAREY, MR. ARTHUR ASTOR, Fayerweather St., Boston, Mass.  
 CLARKE, PROF. S. F., Williamstown, Mass.  
 CONKLIN, PROF. EDWIN G., Princeton University, Princeton,  
 N. J.  
 CRANE, MR. C. R., Woods Hole, Mass.  
 DAVIS, MAJOR HENRY M., Syracuse, N. Y.  
 EVANS, MRS. GLENDOWER, 12 Otis Place, Boston, Mass.  
 FARLOW, PROF. W. G., Harvard University, Cambridge, Mass.  
 FAY, MISS S. B., 88 Mt. Vernon St., Boston, Mass.  
 FOLSOM, MISS AMY, 88 Marlboro St., Boston, Mass.  
 FOOT, MISS KATHERINE, 955 Park Ave., New York City, N. Y.  
 GARDINER, MRS. E. G., Woods Hole, Mass.  
 GARDINER, MISS EUGENIA, 15 W. Cedar St., Boston, Mass.  
 HARRISON, EX-PROVOST C. C., University of Pennsylvania,  
 Philadelphia, Pa.  
 JACKSON, MISS M. C., 88 Marlboro St., Boston, Mass.  
 JACKSON, MR. CHAS. C., 24 Congress St., Boston, Mass.  
 KENNEDY, MR. GEO. G., 284 Warren St., Roxbury, Mass.  
 KIDDER, MR. C. G., 27 William St., New York City, N. Y.  
 KIDDER, MR. NATHANIEL T., Milton, Mass.  
 KING, MR. CHAS. A.  
 LEE, MRS. FREDERIC S., 279 Madison Ave., New York City,  
 N. Y.  
 LOWELL, MR. A. LAWRENCE, 17 Quincy St., Cambridge, Mass.  
 MARRS, MRS. LAURA NORCROSS, 9 Commonwealth Ave., Boston,  
 Mass.  
 MASON, MISS E. F., 1 Walnut St., Boston, Mass.  
 MASON, MISS IDA M., 1 Walnut St., Boston, Mass.

MEANS, MR. JAMES HOWARD, 196 Beacon St., Boston, Mass.  
MERRIMAN, MRS. DANIEL, 73 Bay State Road, Boston, Mass.  
MINNS, MISS SUSAN, 14 Louisburg Square, Boston, Mass.  
MINNS, MR. THOMAS, 14 Louisburg Square, Boston, Mass.  
MORGAN, MR. J. PIERPONT, JR., Wall and Broad Sts., New York City, N. Y.  
MORGAN, PROF. T. H., Columbia University, New York City, N. Y.  
MORGAN, MRS. T. H., New York City, N. Y.  
NOYES, MISS EVA J.  
NUNN, MR. LUCIAN L., Telluride, Colo.  
OSBORN, PROF. HENRY F., American Museum of Natural History, New York City, N. Y.  
PHILLIPS, DR. JOHN C., Windy Knob, Wenham, Mass.  
PHILLIPS, MRS. JOHN C., Windy Knob, Wenham, Mass.  
PORTER, DR. H. C., University of Pennsylvania, Philadelphia, Pa.  
PULSIFER, MR. W. H., Newton Center, Mass.  
ROGERS, MISS A. P., 5 Joy St., Boston, Mass.  
SEARS, DR. HENRY F., 86 Beacon St., Boston, Mass.  
SHEDD, MR. E. A.  
SMITH, MRS. C. C., 286 Marlboro St., Boston, Mass.  
STROBELL, MISS E. C., 955 Park Ave., New York City, N. Y.  
THORNDIKE, DR. EDWARD L., Teachers College, Columbia University, New York City, N. Y.  
TRELEASE, PROF. WILLIAM, University of Illinois, Champaign, Ill.  
WARE, MISS MARY L., 41 Brimmer St., Boston, Mass.  
WHITNEY, MR. HENRY M., Brookline, Mass.  
WILCOX, MISS MARY A., Wellesley College, Wellesley, Mass.  
WILMARTH, MRS. H. D., Elliott St., Jamaica Plain, Mass.  
WILLIAMS, MRS. ANNA P., 505 Beacon St., Boston, Mass.  
WILSON, DR. E. B., Columbia University, New York City, N. Y.  
WILSON, PROF. W. P., Commercial Museum, Philadelphia, Pa.

## 7. CORPORATION MEMBERSHIP LIST

JANUARY, 1917.

ABBOTT, PROF. J. F., Washington University, St. Louis, Mo.  
ABBOTT, MISS MARGARET B., The Bennett School, Milbrook, N. Y.

- ADDISON, DR. W. H. F., University of Pennsylvania Medical School, Philadelphia, Pa.
- ALLEE, DR. W. C., Lake Forest College, Lake Forest, Ill.
- ALLEN, PROF. EZRA, 125 Thompson Ave., Ardmore, Pa.
- ALLYN, MISS HARRIET M., Hackett Medical College, Canton, China.
- ALSBURG, DR. C. S., U. S. Dept. of Agriculture, Washington, D. C.
- BAITSELL, DR. GEORGE A., Yale University, New Haven, Conn.
- BAKER, MRS. L. D., 123 Chiswick Road, Boston, Mass.
- BAKER, DR. E. H., 154 W. Randolph St., Chicago, Ill.
- BANCROFT, PROF. F. W., Aloha Farm, Concord, Cal.
- BARDEEN, PROF. C. R., University of Wisconsin, Madison, Wis.
- BECKWITH, MISS CORA J., Vassar College, Poughkeepsie, N. Y.
- BEHRE, MISS ELINOR H., University of Chicago, Chicago, Ill.
- BEYER, DR. H. G., Stoneleigh Court, Washington, D. C.
- BIGELOW, PROF. M. A., Teachers College, Columbia University, New York City, N. Y.
- BIGELOW, PROF. R. P., Mass. Institute of Technology, Cambridge, Mass.
- BINFORD, DR. RAYMOND, Earlham College, Richmond, Ind.
- BLAKESLEE, PROF. A. F., Carnegie Station, Cold Spring Harbor, Long Island.
- BORING, MISS ALICE M., University of Maine, Orono, Maine.
- BOX, MISS CORA MAY, University of Cincinnati, Cincinnati, Ohio.
- BRADLEY, DR. HAROLD C., University of Wisconsin, Madison, Wis.
- BRUMFIEL, MR. DANIEL M., University of Iowa, Iowa City, Iowa.
- BUCKINGHAM, MISS EDITH N., 342 Marlboro St., Boston, Mass.
- BUDINGTON, PROF. R. A., Oberlin College, Oberlin, Ohio.
- BUMPUS, DR. H. C., Tufts College, Tufts College, Mass.
- BYRNES, DR. ESTHER F., 193 Jefferson Ave., Brooklyn, N. Y.
- BLAKE, DR. IRVING H., Syracuse University, Syracuse, N. Y.
- CALKINS, PROF. GARY N., Columbia University, New York City, N. Y.
- CALVERT, PROF. PHILIP P., University of Pennsylvania, Philadelphia, Pa.

- CARLSON, PROF. A. J., University of Chicago, Chicago, Ill.  
CAROTHERS, MISS ELEANOR, University of Pennsylvania, Philadelphia, Pa.  
CARVER, PROF. GAIL L., Mercer University, Macon, Ga.  
CARY, DR. L. R., Princeton University, Princeton, N. J.  
CASTEEL, DR. D. B., University of Texas, Austin, Texas.  
CATTELL, PROF. J. McKEEN, Garrison-on-Hudson, N. Y.  
CATTELL, MR. McKEEN, Harvard Medical School, Boston, Mass.  
CHAMBERS, DR. ROBERT, JR., Cornell Medical College, New York City, N. Y.  
CHESTER, PROF. WEBSTER, Colby College, Waterville, Maine.  
CHIDESTER, DR. F. E., Rutgers College, New Brunswick, N. J.  
CHILD, PROF. C. M., University of Chicago, Chicago, Ill.  
CLAPP, PROF. CORNELIA M., Mount Holyoke College, South Hadley, Mass.  
CLARK, DR. E. R., University of Missouri, Columbia, Mo.  
COE, PROF. W. R., Yale University, New Haven, Conn.  
COHN, MR. EDWIN J., 315 Central Park West, New York City, N. Y.  
COLLEY, DR. R. H., Dartmouth College, Hanover, N. H.  
COLTON, PROF. H. S., Ardmore, Pa.  
COOLIDGE, MR. C. A., Ames Building, Boston, Mass.  
COPELAND, DR. MANTON, Bowdoin College, Brunswick, Maine.  
COWDRY, DR. E. V., Johns Hopkins Medical School, Baltimore, Md.  
COLE, DR. LEON J., College of Agriculture, Madison, Wis.  
CRAMPTON, PROF. H. E., Barnard College, Columbia University, New York City, N. Y.  
CRANE, MRS. C. R., Woods Hole, Mass.  
CURTIS, PROF. W. C., University of Missouri, Columbia, Mo.  
DANCHAKOFF, MME. VERA, 451 57th St., New York City, N. Y.  
DAVIS, MR. DONALD W., College of William and Mary, Williamsburg, Va.  
DERICK, PROF. CARRIE M., McGill University, Montreal, Canada.  
DEXTER, PROF. J. S., University of Saskatchewan, Saskatoon, Saskatchewan.  
DODDS, PROF. G. S., University of Missouri, Columbia, Mo.

DONALDSON, PROF. H. H., Wistar Institute of Anatomy and Biology, Philadelphia, Pa.

DREW, PROF. GILMAN A., Marine Biological Laboratory, Woods Hole, Mass.

DUGGAR, PROF. B. M., Missouri Botanical Garden, St. Louis, Mo.

DUNGAY, DR. NEIL S., Carleton College, Northfield, Minn.

DUNN, DR. ELIZABETH, Woods Hole, Mass.

EATON, PROF. E. H., Hobart College, Geneva, N. Y.

EDWARDS, DR. D. J., College of the City of New York, New York City, N. Y.

EIGENMANN, PROF. C. H., University of Indiana, Bloomington, Ind.

ELLIS, DR. F. W., Monson, Mass.

FARNUM, MISS LOUISE W., 43 Hillhouse Ave., New Haven, Conn.

FIELD, MISS HAZEL E., Milwaukee Downer College, Milwaukee, Wis.

FIELD, PROF. IRVING, 1 Autumn St., Worcester, Mass.

FISH, MR. J. BURTON, Boys' High School, Brooklyn, N. Y.

GAGE, PROF. S. H., Cornell University, Ithaca, N. Y.

GARREY, Prof. W. E., Tulane University, Richardson Memorial, New Orleans, La.

GEE, PROF. WILSON, Emory University, Oxford, Ga.

GIES, PROF. W. J., Columbia Univ. Dept. Physiological Chemistry, New York City, N. Y.

GLASER, PROF. O. C., University of Michigan, Ann Arbor, Mich.

GLASER, DR. R. W., Bussey Institution, Forest Hills, Mass.

GOLDFARB, PROF. A. J., College of the City of New York, New York City, N. Y.

GOODRICH, MR. H. B., Wesleyan University, Middletown, Conn.

GRAVE, DR. CASWELL, Johns Hopkins University, Baltimore, Md.

GREGORY, DR. LOUISE H., Barnard College, Columbia University, New York City, N. Y.

GREGORY, DR. EMILY R., Sweet Briar College, Sweet Briar, Va.

GREENMAN, DR. M. J., Wistar Institute of Anatomy and Biology, Philadelphia, Pa.

GROSS, MISS BEATRIX H., 457 Convent Ave., New York City, N. Y.

GUNTHER, MISS MAUD C., Eastern High School, Washington, D. C.

- GUYER, DR. M. F., University of Wisconsin, Madison, Wis.
- HAHN, DR. C. W., 567 West 186th St., New York City, N. Y.
- HANCE, MR. ROBERT T., University of Pennsylvania, Philadelphia, Pa.
- HARGITT, DR. C. W., Syracuse University, Syracuse, N. Y.
- HARMAN, DR. MARY T., Kansas State Agricultural College, Manhattan, Kans.
- HARPER, PROF. R. A., Columbia University, New York City, N. Y.
- HARRISON, MR. A. C., 660 Drexel Bldg., 5th and Chestnut Sts., Philadelphia, Pa.
- HARRISON, PROF. ROSS G., Yale University, New Haven, Conn.
- HARVEY, PROF. B. C. H., University of Chicago, Chicago, Ill.
- HARVEY, DR. E. N., Princeton University, Princeton, N. J.
- HARVEY, MRS. E. N., Princeton, N. J.
- HAUGHWONT, MR. F. G., College of Medicine and Surgery, Calle Herran, Manila.
- HAYDEN, MISS MARGARET A., Carnegie Inst. of Technology, Pittsburgh, Pa.
- HEATH, PROF. HAROLD, Stanford University, Calif.
- HEGNER, PROF. R. W., University of Michigan, Ann Arbor, Mich.
- HEILBRUNN, MR. L. V., University of Illinois College of Medicine, Chicago.
- HOAR, MR. D. Blakely, 161 Devonshire St., Boston, Mass.
- HOGUE, DR. MARY J., Wellesley College, Wellesley, Mass.
- HOGUE, MISS MILDRED A., Univ. of Indiana, Arbutus Apts., Bloomington, Ind.
- HOLMES, PROF. S. J., University of California, Berkeley, Cal.
- ISELEY, PROF. F. B., Central College, Fayette, Mo.
- JACKSON, PROF. C. M., University of Minnesota, Minneapolis, Minn.
- JACOBS, DR. MERKEL H., University of Pennsylvania, Philadelphia, Pa.
- JENNINGS, PROF. H. S., Johns Hopkins University, Baltimore, Md.
- JENNER, PROF. E. A., Simpson College, Indianola, Iowa.
- JEWETT, PROF. J. R., Harvard University, Cambridge, Mass.



- JONES, PROF. LYNDS, Oberlin College, Oberlin, Ohio.
- JORDAN, PROF. H. E., University of Virginia, Charlottesville, Va.
- JUST, PROF. E. E., Howard University, Washington, D. C.
- KANDA, DR. SAKYO, Physiological Laboratory, Kyushu Imperial University, Fukuoka, Japan.
- KELLCOTT, PROF. W. E., Goucher College, Baltimore, Md.
- KENNEDY, DR. HARRIS, 286 Warren St., Roxbury, Mass.
- KING, DR. HELEN DEAN, Wistar Institute, Philadelphia, Pa.
- KINGSBURY, PROF. B. F., Cornell University, Ithaca, N. Y.
- KINGSLEY, PROF. J. S., University of Illinois, Urbana, Ill.
- KIRKHAM, DR. W. B., Yale University, New Haven, Conn.
- KNIGHT, MISS MARIAN V., 36 Bedford Terrace, Northampton, Mass.
- KNOWER, PROF. H. MCE., University of Cincinnati, Cincinnati, Ohio.
- KNOWLTON, PROF. F. P., Syracuse University, Syracuse, N. Y.
- KRIBS, DR. HERBERT, University of Pennsylvania, Philadelphia, Pa.
- LANE, PROF. HENRY H., State University of Oklahoma, Norman, Okla.
- LEE, PROF. F. S., 437 West 59th St., New York City, N. Y.
- LEFEVRE, PROF. GEORGE, University of Missouri, Columbia, Mo.
- LEWIS, PROF. I. F., University of Virginia, Charlottesville, Va.
- LEWIS, PROF. W. H., Johns Hopkins University, Baltimore, Md.
- LILLIE, PROF. FRANK R., University of Chicago, Chicago, Ill.
- LILLIE, PROF. R. S., Clark University, Worcester, Mass.
- LINTON, PROF. EDWIN, Washington and Jefferson College, Washington, Pa.
- LOEB, PROF. JACQUES, Rockefeller Institute for Medical Research, New York City, N. Y.
- LOEB, DR. LEO, Washington University Medical School, St. Louis, Mo.
- LOWTHER, MRS. FLORENCE DEL., Barnard College, Columbia University, New York City, N. Y.
- LUND, DR. E. J., University of Pennsylvania, Philadelphia, Pa.
- LUSCOMBE, MR. W. O., Woods Hole, Mass.
- LYMAN, PROF. GEORGE R., Federal Horticultural Board, Washington, D. C.

LYNCH, MISS CLARA J., Smith College, Northampton, Mass.

LYON, DR. E. P., University of Minnesota, Minneapolis, Minn.

MCCLUNG, PROF. C. E., University of Pennsylvania, Philadelphia, Pa.

MCGILL, DR. CAROLINE, Leonard Hotel, Butte, Montana.

MCGREGOR, DR. J. H., Columbia University, New York City, N. Y.

MCINDOO, DR. N. E., Bureau of Entomology, Washington, D. C.

McMURRICH, PROF. J. P., University of Toronto, Toronto, Canada.

MACKLIN, DR. CHARLES C., Johns Hopkins University, Baltimore, Md.

MALL, PROF. F. P., Johns Hopkins University, Baltimore, Md.

MALONE, DR. E. F., University of Cincinnati, Cincinnati, Ohio.

MARTIN, MISS BERTHA E., Wheaton College, Norton, Mass.

MARQUETTE, DR. WILLIAM, Columbia University, New York City, N. Y.

MATHEWS, PROF. A. P., University of Chicago, Chicago, Ill.

MAYER, DR. A. G., Maplewood, N. J.

MEIGS, DR. E. B., Dairy Division Experiment Station, Beltsville, Md.

MELTZER, DR. S. J., 13 West 121st Street, New York City, N. Y.

METCALF, PROF. M. M., 128 Forest St., Oberlin, Ohio.

MINOR, MISS MARIE L., Women's University Club, New York City, N. Y.

MINOURA, MR. TADACHIKA, University of Chicago, Chicago, Ill.

MITCHELL, DR. PHILIP H., Brown University, Providence, R. I.

MOORE, PROF. GEORGE T., Missouri Botanical Garden, St. Louis, Mo.

MOORE, DR. CARL R., University of Chicago, Chicago, Ill.

MOORE, PROF. J. PERCY, University of Pennsylvania, Philadelphia, Pa.

MOORE, DR. A. R., Rutgers College, New Brunswick, N. J.

MOORE, MISS DOROTHEA M., 21 Kirkland St., Cambridge, Mass.

MORGAN, PROF. H. A., Agricultural Experiment Station, Knoxville, Tenn.

MORGAN, DR. ANNA H., Mount Holyoke College, South Hadley, Mass.

- MORRILL, PROF. A. D., Hamilton College, Clinton, N. Y.  
MORRILL, DR. C. V., 338 East 26th St., New York City, N. Y.  
MORRIS, MISS MARGARET, Yale University, New Haven, Conn.  
MURBACH, DR. LOUIS, Central High School, Detroit, Mich.  
NACHTRIEB, PROF. HENRY F., University of Minnesota, Minneapolis, Minn.  
NEAL, PROF. H. V., Tufts College, Tufts College, Mass.  
NEWMAN, PROF. H. H., University of Chicago, Chicago, Ill.  
NICHOLS, DR. M. LOUISE, 3221 Race St., Philadelphia, Pa.  
OLIVER, DR. WADE W., Ohio-Miami Medical College, Cincinnati, Ohio.  
OSBURN, PROF. R. C., Connecticut College, New London, Conn.  
OSTERHOUT, PROF. W. J. V., Harvard University, Cambridge, Mass.  
PACKARD, DR. CHARLES, Columbia University, New York City, N. Y.  
PACKARD, DR. W. H., Bradley Polytechnic Institute, Peoria, Ill.  
PAINTER, DR. T. S., University of Texas, Austin, Texas.  
PAPPENHEIMER, DR. A. M., Columbia University, New York City, N. Y.  
PARKER, PROF. G. H., 16 Berkeley Street, Cambridge, Mass.  
PATON, DR. STEWART, Princeton University, Princeton, N. J.  
PATTEN, DR. WILLIAM, Dartmouth College, Hanover, N. H.  
PATTERSON, PROF. J. T., University of Texas, Austin, Texas.  
PAYNE, PROF. F., University of Indiana, Bloomington, Ind.  
PEARSE, PROF. A. S., University of Wisconsin, Madison, Wis.  
PEEBLES, MISS FLORENCE, Sophie Newcomb College, New Orleans, La.  
PHILLIPS, MISS RUTH L., Western College, Oxford, Ohio.  
PIKE, PROF. FRANK H., 437 West 59th St., New York City, N. Y.  
PINNEY, MISS MARY E., Bryn Mawr College, Bryn Mawr, Pa.  
PORTER, MRS. M. B., 402 West 30th St., Austin, Texas.  
PRENTISS, MISS HENRIETTA, Normal College, New York City, N. Y.  
PRICE, DR. WESTON A., Research Commission of the National Dental Association, Cleveland, Ohio.  
RAE, MISS ANNE M., 34 Jefferson Ave., Brooklyn, N. Y.  
RANKIN, PROF. W. M., Princeton University, Princeton, N. J.

- REA, DR. PAUL M., Charleston Museum, Charleston, S. C.  
REDFIELD, MR. ALFRED C., Concord, Mass.  
REIGHARD, PROF. JACOB, University of Michigan, Ann Arbor, Mich.  
REINKE, MR. E. E., Vanderbilt University, Nashville, Tenn.  
RICE, PROF. EDWARD L., Ohio Wesleyan University, Delaware, Ohio.  
RICHARDS, DR. A., Wabash College, Crawfordsville, Ind.  
ROBBINS, DR. W. J., Alabama Polytechnic Institute, Auburn, Ala.  
ROBERTSON, MISS ALICE, Wellesley College, Wellesley, Mass.  
ROBERTSON, PROF. W. R. B., University Club, Lawrence, Kansas.  
ROGERS, PROF. CHARLES G., Oberlin College, Oberlin, Ohio.  
ROSENOW, DR. E. C., Mayos Clinics, Rochester, Minn.  
RUDISCH, DR. J., Mount Sinai Hospital, New York City, N. Y.  
SANDS, MISS ADELAIDE G., 348 N. Main St., Port Chester, N. Y.  
SANDS, DR. GEORGIANA, 348 N. Main St., Port Chester, N. Y.  
SCOTT, DR. ERNEST L., Columbia University, New York City, N. Y.  
SCOTT, PROF. G. G., College of the City of New York, New York City, N. Y.  
SCOTT, PROF. JOHN W., University of Wyoming, Laramie, Wyoming.  
SHULL, DR. A. FRANKLIN, University of Michigan, Ann Arbor, Mich.  
SHUMWAY, MR. WALDO, Amherst College, Amherst, Mass.  
SMITH, DR. BERTRAM G., State Normal College, Ypsilanti, Mich.  
SNOW, MISS LAETITIA M., Wellesley College, Wellesley, Mass.  
SOLLMAN, DR. TORALD, Western Reserve University, Cleveland Ohio.  
SPAETH, DR. REYNOLD A., Yale University, New Haven, Conn.  
SPAULDING, DR. E. G., Princeton University, Princeton, N. J.  
SPENCER, DR. H. J., 125 Washington Place, New York City, N. Y.  
SPROWLES, MISS EDITH A., 4833 Griscom St., Frankford, Pa.  
STEWART, MISS MARY W., Barnard College, Columbia University, New York City, N. Y.  
STOCKARD, PROF. C. R., Cornell Medical College, New York City, N. Y.

- STREETER, DR. GEORGE L., Johns Hopkins Medical School,  
Baltimore, Md.
- STRONG, DR. O. S., 437 West 59th St., New York City, N. Y.
- STRONG, DR. R. M., Vanderbilt University, Nashville, Tenn.
- STURTEVANT, MR. A. H., 528 West 123d St., New York City,  
N. Y.
- TASHIRO, DR. SHIRO, University of Chicago, Chicago, Ill.
- TAYLOR, MISS KATHERINE A., Cascade, Washington Co., Mary-  
land.
- TENNENT, PROF. D. H., Bryn Mawr College, Bryn Mawr, Pa.
- THOMAS, DR. ADRIAN, 2012 Hanover Ave., Richmond, Va.
- THOMPSON, PROF. CAROLINE B., 195 Weston Road, Wellesley,  
Mass.
- TINKHAM, MISS FLORENCE L., 71 Ingersoll Grove, Springfield,  
Mass.
- TOMPKINS, MISS ELIZABETH M., 2015 Bedford Avenue, Brooklyn,  
N. Y.
- TREADWELL, PROF. A. L., Vassar College, Poughkeepsie, N. Y.
- TURNER, MR. C. L., Marquette Univ. School of Medicine,  
Milwaukee, Wis.
- UHLENHUTH, DR. EDWARD, Rockefeller Institute for Medical  
Research, New York City, N. Y.
- VAN CLEAVE, DR. H. J., University of Illinois, Urbana, Ill.
- VAUGHAN, DR. T. W., U. S. Geological Survey, Washington,  
D. C.
- WAITE, PROF. F. C., Western Reserve University Medical School,  
Cleveland, Ohio.
- WALDRON, DR. F. R., 1701 Hill St., Ann Arbor, Mich.
- WALKER, DR. GEORGE, Charles and Center Streets, Baltimore,  
Md.
- WALLACE, PROF. LOUISE B., Mount Holyoke College, South  
Hadley, Mass.
- WARBASSE, MRS. J. P., 384 Washington Ave., Brooklyn, N. Y.
- WARD, PROF. H. B., University of Illinois, Urbana, Ill.
- WARDWELL, DR. E. H., Mattapoissett, Mass.
- WARREN, PROF. HOWARD C., Princeton University, Princeton,  
N. J.
- WASTENEYS, DR. HARDOLPH, University of California, Berkeley,  
Cal.

WATSON, MR. FRANK E., Hobart College, Geneva, N. Y.

WENRICH, DR. D. H., University of Pennsylvania, Philadelphia, Pa.

WERBER, DR. E. I., Yale University, New Haven, Conn.

WHEELER, PROF. W. M., Bussey Institution, Forest Hills, Mass.

WHERRY, DR. W. B., Cincinnati Hospital, Cincinnati, Ohio.

WHITE, MISS E. GRACE, 10707 Grantwood Ave., Cleveland, Ohio.

WHITNEY, MR. DAVID D., University of Nebraska, Lincoln, Neb.

WIEMAN, PROF. H. L., University of Cincinnati, Cincinnati, Ohio.

WILCOX, DR. ALICE W., Fairbanks Museum of Natural History, St. Johnsbury, Vt.

WILDMAN, DR. E. E., 4331 Osage Avenue, Philadelphia, Pa.

WILLIAMS, DR. ANNA W., 549 Riverside Drive, New York City, N. Y.

WILSON, PROF. H. V., University of North Carolina, Chapel Hill, N. C.

WOGLOM, DR. WILLIAM H., Columbia University, New York City, N. Y.

WOODRUFF, PROF. L. L., Yale University, New Haven, Conn.

WOODWARD, MISS ALVALYN E., Simmons College, Boston, Mass.

WHITING, MR. PHINEAS W., University of Pennsylvania, Philadelphia, Pa.

YOUNG, MR. D. B., 33 Dunmoreland St., Springfield, Mass.